Electronic Record For Patients With Diabetes Mellitus

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Diabetes mellitus is a condition which affects many bodily systems over an extended period of time. Paper records are typically very unsatisfactory. We have designed and introduced into practice an electronic medical record for patients with diabetes which has the following characteristics:

Data entry can be accomplished by persons without formal medical or nursing training, thereby greatly reducing the cost of medical encounters. Information is presented in a visually appealing graphic form with extensive use of icons. The system provides sufficient detail for medical management of diabetes and its complications. It can be a component of a comprehensive electronic medical record or stand alone. The structure is hierarchical. A summary is provided on a master screen which permits the medical evaluator in three minutes to absorb all the critical diabetes management information. Quality control parameters are built into the system and will automatically cue desk attendants when specific appointments are needed. More detailed segmental explorations are permitted on sub-screens. Data can be presented in standard or SI units. Relevant data items are grouped logically and visually for rapid comprehension. Extensive use of pop-up menus simplifies the user interface.

The record can serve as a teaching aid for patients and on request can provide a narrative summary suitable for insertion into a paper record or as medical reports to patient or referring physician.

Specific provision is made for five types of patient provider encounter by aggregating data relevant to each encounter on single screens.

These are: initial consultation; continuing care visit; insulin dose adjustment visit; encounter with diabetes nurse educator; encounter with dietitian.

The system includes the ability to retrieve on demand and to analyze data from any population of patients with defined parameters. Test scheduling, return visits and billing may be integrated with the business office computing system.

The computer system resides on an IBM RISC System/6000 POWER server model 320H computer with 32 mb of memory and 800 mb of disc. Terminals are used with a graphical user interface to allow users point and click ease of use. The applications are developed using Uniface's Engineering and Design Facility (IDF). This tool allows rapid development of applications and will reduce maintenance time throughout the life of the system. Uniface allows applications to the platform database and display station independently. Uniface was developed utilizing the ANSI/ASO 3-Schema architecture which includes the Conceptual, External and the Internal schema. Grafsman by Soft-tec International is being used for graphical display.

Sybase is the data base used to store the patient information. Sybase is a high performance, distributed relational database management system.

Other software on the system includes AIX (operating system) and KiNet (LAT protocol for UNIX systems).

Applications suited to Personal Computers and Macintosh computers are in preparation.